EXHIBIT A

CURRICULUM VITAE

Webster E. Howard
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Education:

B.S. in Physics, Carnegie-Mellon University, 1955, A M and Ph D in Physics, Harvard University, 1956 and 1962, respectively (Nat. Science Foundation Fellow)

Thesis title: "Pressure Dependence of Magnetoconductance in n-Germanium."

Work Experience:

1955-57 Summer work at Westinghouse Research Laboratories in semiconductor physics.

1960 US Army Reserve duty, working at Ft. Monmouth, NJ laboratory, in high pressure studies of semiconductors.

1961-93 Research Staff Member at IBM T. J. Watson Research Center, Yorktown Heights, NY. From 1961-73, worked primarily in the area of semiconductor physics, including work on electron quantization in surfaces, semiconductor superlattices, heterojunctions, the band structure of IV-VI compoinds, injection luminescence, and amorphous semiconductors. As a member of the IBM injection laser research team, achieved in 1962 (with F. F. Fang) the first CW operation of an injection laser, at 1.9K. In 1964, initiated the first experiments aimed at demonstrating the two-dimensional nature of electrons in Si inversion layers. Carried out the first self-consistent calculations of two-dimensional subband levels in inversion layers, using a variational approach which has since been widely used. This provided the theoretical framework for the successful experiments carried out with Fowler, Fang, and Stiles, which yielded the first unequivocal evidence of two-dimensionality. With F. Stern, extended the theoretical treatment to include scattering effects, in a paper which became a Citation Classic. In 1972, with L. Esaki, L. L. Chang, and others, achieved the first semiconductor superlattices, using molecular beam epitaxy. A 1973 paper on these experiments also became a Citation Classic.

In 1973, became manager of an exploratory display physics group, working on electrochromic displays and the physics of plasma displays. The plasma work was considered by many the best plasma device physics activity in the industry. Initiated in 1974 a thin film electroluminescence activity which grew into a major project to develop a novel storage CRT using electron beam switching of hysteretic thin film EL devices. Reported, with P. M. Alt, the first observations of such switching, in 1977. This EL work led to a theoretical model memory in thin film EL devices which is still considered the best treatment of the phenomenon.

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prototype and life testing of cathodes, which in the end demonstrated clearly the strengths and weaknesses of the technolgy. In 1983, argued successfully for the initiation in IBM of a project in thin film transistor-liquid crystal technology as a potential successor to CRT technology. This effort led eventually to a Joint Program with IBM Japan and subsequently to a Joint Venture with Toshiba Corporation, the result of which was to give IBM a leadership position in this important emerging technology. As manager of the Flat Panel Display Technologies Department in IBM Research, assembled and led a team of thirty people which provided new materials, simple and effective processes, design simulation tools and mathematical models for electrooptical behavior, as well as a manufacturing tester which saved tens of millions of dollars

1993-96 High Resolution Technologies Director, AT&T, working at Bell Laboratories, Murray Hill, NJ. As part of a team trying to establish a flat panel manufacturing unit in AT&T, responsible for technical relations, including a partnership with Xerox and Standish Industries known as the Advanced Display Manufacturing Partnership. This effort was supported by a $50M contract from the Advanced Research Projects Agency of the Department of Defense. Also served as technical consultant to the Display Research Department, which was prototyping thin film transistor-liquid crystal displays and developing manufacturing processes for this technology.

1996-2002 Chief Technology Officer, eMagin Corporation, Hopewell Junction, NY. Responsible for organizing and carrying out development of organic light emitting diode microdisplays, using silicon IC chips as active matrix substrates. This successful program, which has garnered multiple industry and customer awards, provides the best near-to-eye display performance characteristics.

Professional Honors and Activities:

John Price Wetherill Medal of the Franklin Institute (1981)
Jan Rajchman Prize of the Society for Information Display (2003)
Fellow of the American Physical Society
Fellow, IEEE
Fellow of the Society for Information Display
Member IBM Academy of Technology (ret.)
Secretary, Society for Information Display, 1990-92
Treasurer, Society for Information Display, 1992-94
President-elect, Society for Information Display, 1994-96
President, Society for Information Display, 1996-98
Program Chairman, 1988 International Display Research Conference (SID, IEEE, ADCOM)
General Chairman, 1991 International Display Research Conference (SID, IEEE, ADCOM)
General Co-chair of the International Information and Image Display Conference, 1992
Guest Editor, IEEE Trans on Electron Devices, Special Issue on Displays & Hardcopy Technologies, Vol. 36, No 9 (1989)
Guest Editor, IEEE Trans on Electron Devices, Special Issue on Amorphous Semiconductor Devices, Vol. 36, No 12 (1989)
Overseas Advisor for Japan Display and Eurodisplay conferences, 1992-2002
Foreign Advisor, Ministry of Economic Affairs, Rep of China, July, 1998
Member Sigma Xi, Tau Beta Pi

Corporate Awards:

IBM Outstanding Contribution Award for work on CW Injection Laser (1963)
IBM Outstanding Contribution Award for work on Surface Quantization (1967)
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49 "Design and Manufacturing of Active-Matrix Organic Light-Emitting Microdisplays on Silicon", K. Pichler, W. E. Howard, and O. Prache, Proc. of the SPIE, Vol. 3797, pp 258-265 (1999).

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